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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,202	11/12/2003	Rafael L. Espinoza	1856-40900 (9936 & 9919)	6007

31889 7590 07/29/2005

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EXAMINER	
PARSA, JAFAR F	
ART UNIT	**PAPER NUMBER**
1621	

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,202	ESPINOZA ET AL.	
	Examiner	Art Unit	
	Jafar Parsa	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27 and 29-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27 and 29-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/1/04 & ~~3/2/04~~ 3/25/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election without traverse of Group III in the reply filed on 4/29/2005 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-26, 29-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Singleton et al (US 2001/0031793 A1).

Singleton teaches a method of conducting hydrocarbon synthesis and a highly stable cobalt on alumina catalyst precursor. The method comprises the step of reacting a synthesis gas in a slurry bubble column reactor in the presence of the catalyst. The catalyst comprises a gamma-alumina support doped with an amount of lanthana oxide, barium oxide, or a combination thereof effective for increasing the thermal stability of the catalyst in the slurry bubble column reacting system while maintaining or increasing the activity of the catalyst (see abstract).

Singleton teaches that the alumina support is preferably produced from relatively high purity, synthetic boehmite. The boehmite is formed from aluminum alkoxide of the type obtained in the manufacture of synthetic fatty alcohols. Alternatively, suitable, high purity boehmite materials can be formed from aluminum alkoxide produced by alcohol/aluminum metal reaction processes (see col. 3 paragraph 0026).

Singleton teaches that the catalytic components of the catalysts are added to the support by totally aqueous impregnation using appropriate aqueous solution compositions and volumes to achieve incipient wetness of the support material with the

desired metal loading(s). Promoted catalysts are most preferably prepared by totally aqueous co-impregnation (see col. 3, paragraph 0033).

Singleton teaches that as one example, a particularly preferred ruthenium-promoted cobalt catalyst is prepared according to the following procedure. First, the support, preferably a lanthanum or barium doped gamma-alumina, is calcined at from about 400 ^{0}C. to about 700 ^{0}C., preferably about 500 ^{0}C., for about 10 hours. The calcined support is then impregnated with an aqueous solution containing both cobalt nitrate [$Co(NO_3)_2$-$6H_2O$] and ruthenium (III) nitrosyl nitrate [$Ru(NO)(NO_3)$-xH_2O] using an appropriate quantity to achieve incipient wetness with the desired loadings of cobalt and ruthenium. The resulting catalyst precursor is then dried for 5 hours at 115 ^{0}C. with moderate stirring in order to remove the solvent water. The dried catalyst is then calcined in air by raising its temperature at a rate of 1 ^{0}C./min to 300 ^{0}C. and holding for at least 2 hours (see col. 3, paragraph 0035). The synthesis gas feed used in the reaction process have a CO:H_2 volume ratio of from about 0.5 to about 3.0 (see col. 4, paragraph 0039). The examiner notes that cobalt, lanthanum and aluminum, which are used for conducting hydrocarbon synthesis taught by Singleton et al have an atomic volume between 6 and 14 cm^3/mole. A gamma-alumina or boehmite is an aluminum modified alumina, which meets the limitation of claim 35.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 27 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singleton et al (US 2001/0031793) as applied to claims 1-26, 29-43 above, and further in view of Roy-Auberger et al (USPN 6,465,530).

The difference between Singleton and claimed invention is that Singleton calcines the lanthanum doped gamma-alumina form about 400 ^{0}C to about 700 ^{0}C, whereas claim 27 the alumina precursor is calcined at temperatures between 800 ^{0}C and about 900 ^{0}C. Furthermore, claim 44 requires that modifying the alumina support with aluminum salt such as aluminum nitrate. However, Roy-Auberger teaches a process for synthesizing hydrocarbons from synthesis gas in the presence of a silica-alumina prepared by coprecipitating and calcining at a temperature in the range from about 500 ^{0}C to about 1200 ^{0}C where cobalt supported on silica-alumina prepared by impregnating cobalt nitrate into a silica-alumina prepared by co-precipitation of a mixture of silicic acid and aluminum nitrate (see abstract and catalyst B on col. 8).

Roy-Auberger teaches that a catalyst comprising aluminum modified alumina using silica-alumina prepared by coprecipitating a mixture of silicic acid and aluminum nitrate and calcining it at a high temperature is particularly active in a process for synthesizing hydrocarbon, the catalyst has improved mechanical properties, especially when is used in a slurry bubble column reactor (see col. 2, lines 27-40).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the aluminum modified alumina by coprecipitating a mixture of silicic acid and aluminum nitrate and calcining it at a high temperature in

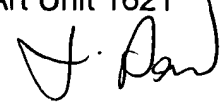
order to improve the mechanical properties, especially when is used in a slurry bubble column reactor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jafar Parsa whose telephone number is (571)272-0643. The examiner can normally be reached on 8 a.m.-4:30 p.m. (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571)272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jafar Parsa
Primary Examiner
Art Unit 1621



J. PARSA
PRIMARY EXAMINER

JP
July 5, 2005